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D[illegible] S. J[illegible].

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[illegible] L[illegible] S[illegible] [illegible] H[illegible]ili[illegible].

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B[illegible] [illegible] H[illegible]ili[illegible] [illegible] of [illegible] [illegible] [illegible]otanists [illegible] [illegible] [illegible]. But in spite of this the exact origin, [illegible] [illegible] [illegible] various [illegible] of the [illegible] [illegible] and especially the morphological significance of the [illegible] [illegible] [illegible] [illegible] [illegible] out satisfactorily in [illegible] [illegible]. This is [illegible] [illegible] inthemain to the [illegible] [illegible] of [illegible], [illegible] all the [illegible] [illegible], [illegible] [illegible] [illegible] successful study of [illegible] [illegible] *in toto* [illegible] [illegible] [illegible]. But it is [illegible] also to the [illegible] [illegible] of the [illegible] [illegible] with its [illegible] [illegible] [illegible] [illegible], root, [illegible], leaf, [illegible] [illegible] [illegible], [illegible] [illegible], [illegible] [illegible], in rapid succession [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. Still [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] with [illegible] [illegible] [illegible], [illegible] [illegible], [illegible], H[illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible]. [illegible] ([illegible], [illegible] [illegible] [illegible] [illegible]. [illegible]

[illegible] J. A. [illegible]

[illegible]

[illegible], [illegible]

[illegible] now [illegible]

[illegible]. It [illegible], [illegible] would [illegible] to study [illegible] also, for comparison, [illegible] detailed [illegible] development [illegible] all [illegible].

[illegible] logical laboratory of the Johns Hopkins University, under the direction of Dr. J. F. [illegible], to whom for his constant assistance and [illegible] interest, I wish here to express my sincere thanks. I am indebted also to Dr. [illegible] A. [illegible], of Yale University, for aid in obtaining material.

The material used was obtained from [illegible], Conn. and Cromwell, Conn. It was preserved in either [illegible] alcohol, [illegible] acid, or [illegible] acetic mixture ([illegible]) [illegible] solution of corrosive sublimate. All of these gave good results, [illegible]

[illegible]

[illegible]

[illegible]

T[illegible] D[illegible]

Pr[illegible] ll[illegible] [illegible] leaf in Marsilia, is the [illegible] J. [illegible] leaves of [illegible], [illegible] will [illegible] [illegible].

The leaves of Marsilia arise in two rows, one on each of the dorso-lateral surfaces of the stem. Each leaf arises from one of the cells derived from a dorso-lateral segment of the tetrahedral apical cell of the stem. The leaf [illegible] cell is first [illegible] when the segment in which it arises, is cut off [illegible] in its series [illegible] apical cell. It is [illegible] distinguishable [illegible] its [illegible], [illegible] it [illegible] general [illegible] of the stem [illegible], (L. Fi[illegible]).

The first division [illegible] leaf [illegible] cell, is [illegible] [illegible] [illegible], [illegible] [illegible] (. . Fi[illegible]. [illegible]). [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] ('77) [illegible] own [illegible]

[illegible] Le[illegible]

('7?) in [illegible] ('77) [illegible]

in [illegible] ('77) in [illegible] Klein ('9?) in Pol[illegible] ('?) in [illegible]

('77) in [illegible]. In P[illegible], [illegible]

[illegible] ('?) [illegible] Klein ('?) is [illegible]

[illegible] to [illegible]

[illegible].

In Pil[illegible], [illegible]

[illegible]

[illegible]

[illegible]

[illegible] apical cell [illegible] in the apical cell [illegible]

[illegible]

[illegible]

[illegible] lower [illegible] ([illegible]) i [illegible]. Dr. [illegible].

[illegible]

[illegible] ([illegible] Fig. 22). [illegible]

[illegible] ([illegible]). [illegible]

[illegible]

The second [illegible] of [illegible] cell [illegible], occurri[illegible] [illegible] cells of [illegible] ([illegible]) [illegible] ([illegible], [illegible] in [illegible], [illegible] the [illegible] of the [illegible] border [illegible] (Fig. [illegible]) [illegible] or [illegible] (Fig. [illegible]). The first division wall to [illegible] in the [illegible] is [illegible] (Fig. [illegible]), and [illegible] the middle of the inner border to the [illegible] of the outer border, so as to cut off [illegible] the whole semicircular segment toward the dorsal side ([illegible], Fig. 7 - 10). We may call the third [illegible] [illegible], [illegible] still left of the [illegible] cell is [illegible] (e.g., Fig. [illegible]). [illegible] ([illegible]), [illegible] "[illegible]" of [illegible] ([illegible]). But this [illegible] here, when the [illegible] position of the [illegible] walls is [illegible], [illegible] the position of the walls [illegible], [illegible] tion in the [illegible], [illegible].

[illegible]

[illegible] segment, [illegible] order of the s[illegible] section II [illegible] (Pl. [illegible], Fig. 10. 11). I[illegible] -inal cell walls [illegible] In section I there is formed first a pericline (Pl. [illegible], Fig. 11), [illegible] third of the distance outward from the center of the leaf, cutting off the cells of the inner [illegible] part of the plerome contributed by this section to the axial bundle of the leaf. Then a longitudinal and radial anticline, which we may call the [illegible] anticline, cuts the outer cell into two (Pl. [illegible], Figs. 7. 11). Meantime the plerome of section II is cut off by a pericline (Fig. 11), while the tertiary [illegible]-inal cell divides by a transverse anticline (Pl. I, Fig. 6. 7) into an acroscopic and a basiscopic marginal cell. This anticline is the "[illegible] wall" of S[illegible].

[illegible] divisions [illegible] described [illegible] follow first the [illegible] of the two tertiary marginal cells. In each of these there is formed first [illegible] (Pl. [illegible], Fig. 11) [illegible] parallel to wall I [illegible] dorsal side of the marginal cell; [illegible] a similar wall is formed on the ventral side parallel to wall I[illegible] (Figs. [illegible] 11). Then

are the last two marginal cells of the eighth [illegible] segment. The next wall formed in [illegible] either one of two positions. In the commoner type of division, which may be considered as typical, [illegible] is formed (V, Fig. 15) parallel to wall III, forming the eighth and last section and leaving an ultimate marginal cell of the sixth grade. Then a periclinal wall appears, running from wall IV to wall V, and the function of the marginal cell as such is thus ended. In the other and less frequent type of division, the marginal cells of the fifth grade are divided immediately by periclinal walls running from wall III to wall IV, the marginal cell of the fifth grade playing the same role here as that of the sixth grade in the first type; and their further development is also practically the same in both cases. The fate of all the segments of the leaf is in other respects the same, with the exception of those giving rise to the lamina and to the sporocarp, in which the periclinal is never formed in the marginal cell.

P[illegible].

[illegible]

[illegible]

[illegible]

[illegible] in [illegible]

[illegible] (pl. [illegible] Fig. [illegible]) [illegible]

[illegible] of [illegible] in [illegible], [illegible] of sclere[illegible]

(Figs. 12 - 15), while [illegible]

[illegible] to [illegible], first [illegible] to [illegible] wall [illegible],

[illegible] still later the sclerenchyma wall (pl. v., Fig. 14).

[illegible] soon splits [illegible] periclinally into two layers [illegible]

round the whole circumference of the pedicle, [illegible]

[illegible] periclinal [illegible], [illegible] longitudinal [illegible],

[illegible] epidermis, [illegible]

[illegible] wall in thickness [illegible] (e.g.

Figs. 14 - 19). [illegible] lining of the pedicle wall, [illegible] of

the section wall, [illegible]

[illegible]

[illegible] epidermis (e.g., Figs.

12 - 19). [illegible] longitudinal [illegible]

[illegible] of the pedicel, of which, [illegible]

[illegible]

[illegible].

[illegible]

[illegible]

[illegible] (pl. Figs. [illegible] - 17), [illegible]

[illegible] (Fig. [illegible]). [illegible]

[illegible] (. . –), [illegible] (Figs. [illegible] 17, 1?). [illegible] (Figs. 1? – 1?) [illegible] cilia [illegible] with those of their fellows of [illegible] (Figs. 17, 21). [illegible] between these [illegible] cilia, [illegible] structure [illegible] the partition [illegible] (Figs. 1?, 17, 21). These cilia [illegible] canal [illegible] (Figs. 1 , 1 –), [illegible] is [illegible] of small [illegible] isolated [illegible], [illegible] canal opposite [illegible], [illegible] in the length of [illegible] [illegible]mens. From these [illegible] cells, [illegible] canal, [illegible]. [illegible], [illegible] (Figs. [illegible], [illegible] 0, [illegible]). [illegible]

"[illegible]" [illegible], [illegible]
[illegible] (L. . . .F . 1, 0,).

In [illegible] [illegible], [illegible], [illegible], [illegible] canals. [illegible] of [illegible] cells, [illegible], [illegible], occasionally [illegible], [illegible] [illegible], [illegible]. [illegible] [illegible], [illegible] [illegible] I have seen, [illegible] of Bischoff ('[illegible]), is [illegible] of [illegible] canals.

As a comparatively late stage of the development [illegible], when [illegible] longitudinal partition is [illegible] cells [illegible], [illegible] cells, next to [illegible], [illegible] ones [illegible] by a [illegible] cells. [illegible] (.e.,Fig. I), [illegible], [illegible] cells. [illegible] which [illegible], [illegible], [illegible]. [illegible]

[illegible] , [illegible]

[illegible] , [illegible]

[illegible] .

Wh[illegible] ell [illegible] c [illegible] v[illegible]

one long[illegible] in leaf [illegible] (F[illegible] .

[illegible]), forming thus [illegible] cells [illegible] , [illegible]

length of a [illegible] of [illegible] ,

There is cut from each of these cells, [illegible] -

cling [illegible] microscopic [illegible] , a small cell which gives rise

to one of the [illegible] cle [illegible]

leaf. The rest of the original epidermal cell [illegible]

[illegible] cells [illegible] microscopic [illegible]

one of [illegible] (Fig. [illegible]), then [illegible] divisions

follow and [illegible] the epidermal cells become [illegible]

elongated (Fig. [illegible]), as has been shown by [illegible] ('[illegible]) and

also by [illegible] Pi[illegible] , [illegible]

[illegible] successive [illegible] . Each [illegible] cell [illegible]

[illegible] of [illegible] epidermis (Fig. [illegible]) [illegible]

walls [illegible] much, [illegible] ,

in [illegible] . On [illegible]

microscopic [illegible] ,

on [illegible] of [illegible] in [illegible]

[illegible] , [illegible]

[illegible] (Fig.

[illegible]0). [illegible]

[illegible] ly lo[illegible] [illegible] s [illegible] F[illegible]. [illegible] il[illegible] [illegible] si[illegible] P[illegible].

S[illegible] cell[illegible] l, [illegible] ill [illegible].

F[illegible] [illegible] cells [illegible], [illegible] so-called [illegible] (e.g., Fig. 1, [illegible]). The contents of these [illegible] color in [illegible], [illegible] small [illegible]. In [illegible] cells [illegible] the same size as [illegible] ordinary [illegible] cells. The [illegible] as long as [illegible], while [illegible] cell [illegible], [illegible] small into cell [illegible] (Fig. [illegible]) [illegible] large [illegible].

[illegible]

[illegible] (F[illegible]., [illegible]-[illegible]). L[illegible] [illegible], [illegible] [illegible] [illegible]. [illegible] II [illegible] [illegible]; [illegible] (F[illegible]. [illegible]-[illegible]). Of [illegible], [illegible] cell [illegible] I [illegible] III ([illegible]., Figs. [illegible], [illegible]-[illegible]) [illegible] divides [illegible], [illegible] [illegible]. The [illegible], [illegible] (F[illegible]. [illegible]), [illegible] in clumps [illegible]. Later [illegible] and [illegible] mic contents of [illegible], [illegible], [illegible] characteristic [illegible] (Fig. [illegible]). [illegible] [illegible]. [illegible] only cell of [illegible] of [illegible] considerable [illegible] [illegible].

Th[illegible], [illegible]

[illegible]lerome of se[illegible] III [illegible] IV [illegible] plerome of s[illegible] I, b[illegible] longitudinal anticlines, and by few transverse anticlines, to form within this the remaining tissues of the axial bundle. The small cells of the outer layer of the bundle [illegible] become more regular in shape and uniform in size [illegible] [illegible] the characteristic bundle sheath (l.s. Figs. 1 , 1).

The plerome of the ultimate marginal cell never takes any part in the formation of the axial bundle, but in some cases that of section V apparently contributes to the formation of the sheath and of a few cells within this (Fig. 1).

The Lamina.

By the time that the apical cell of the leaf has ceased to cut off segments, the tenth and eleventh (or eleventh and twelfth) segments from the base on each side, have begun to grow out laterally and ventrally to form the first pair of pinnae (pl. Fig. 1). Th[illegible]s [illegible] c[illegible] [illegible], [illegible] to do in Asplenium serpentini by Sadebeck (') and in Onoclea struthiopteris by Campbell ('). In this respect they agree rather with the pinnae of Ceratopteris thalictroides, as described by Kny ('). Th[illegible] le[illegible]

[illegible] (F .) [illegible] -men [illegible] lines or [illegible] secon- sections will show, [illegible] though it was never seen satisfactorily. It is certain, however, that the lower pinna on each side is formed from the whole length of one leaf segment and all or part of another, and never of a single segment or of more than two. After cutting off its last segment the apical cell of the leaf, as stated above, probably forms marginal cells like those formed in the segments. By the time that this has happened, the segments beyond the first pair of pinnae, except all or part of the one next to the pinna on each side, have begun to swell out (Fig.) to form the terminal pair of pinnae. Later on the marginal cells arising from the apical cell probably take part also in the development of these pinnae.

The beginning of the development of a pinna is best seen in a transverse section of [illegible], and is practically the same for both pinnae. The [illegible] segments of [illegible] [illegible] [illegible] formed, and [illegible] marginal cell [illegible] is [illegible] dividing one, as the segment [illegible] no parenchyma ([illegible]) [illegible] formed [illegible] cells. These [illegible] [illegible]

[illegible] (F[illegible]). The next [illegible] V [illegible] side of the [illegible] cell (VI , Fig. [illegible]), co[illegible]ing this [illegible]. Then wall VII is formed toward the dorsal side of the cell, wall VIII toward the ventral side, and so on till a large number of segments, [illegible], have been formed (Fig. [illegible]), the marginal cell being still distinguishable, and probably active, when the pinna is more than two millimeters broad. The [illegible] divide [illegible] by [illegible] periclines, [illegible] the dermatogen [illegible] clines (Fig. [illegible]), [illegible] the various tissues of the lamina. Meanwhile the marginal cells divide also by anticlines perpendicular to the edge of the pinna (Fig. [illegible]). They thus [illegible] increase in number [illegible] growing edge, as Hanstein ('[illegible]) has shown, the pinna finally becoming [illegible] shaped [illegible] leaf. The pinnae [illegible] [illegible], [illegible] those of [illegible] [illegible], [illegible] [illegible] (Fig. [illegible]).

A [illegible] [illegible] ma, [illegible], [illegible] mas [illegible] ves [illegible]. [illegible] [illegible] mas [illegible], [illegible] S[illegible] (') [illegible] As[illegible]. Th[illegible] [illegible] sion, [illegible] sides, [illegible] [illegible].

In the leaf of Pil[illegible] which was examined for comparison with Marsilia, the segments [illegible] typical cell [illegible], [illegible] in [illegible] cell of [illegible]. Th[illegible] correspond in [illegible] position [illegible] Mar-silia, [illegible] than in [illegible], since [illegible], its [illegible] divisions as in Marsilia. [illegible] I [illegible], [illegible], [illegible]. [illegible], [illegible], [illegible],

[illegible] (' , VIII, [illegible]) [illegible] (' [illegible] (' , XV, [illegible]). [illegible] II [illegible]

[illegible] S[illegible].

[illegible] Occasionally [illegible] Again, more rarely, [illegible] II [illegible]

I [illegible]

I [illegible] season, having [illegible] entire [illegible] season. [illegible] summer [illegible]

[illegible]

[illegible]. Th[illegible], [illegible] whole, he [illegible] reference on [illegible].

On [illegible], Russow ([illegible]) says, [illegible] papilla on [illegible] side of [illegible]. Mettenius ([illegible]) [illegible], [illegible] endogenously [illegible] mass of tissue in the interior of which [illegible]. Th[illegible] Russow ([illegible]), [illegible], [illegible] in [illegible] capsule, [illegible] shown in Fig. [illegible]. He [illegible], [illegible],

[illegible] ,

[illegible] , [illegible]

[illegible]

[illegible]. O[illegible]

[illegible] "sorus cells", [illegible]

[illegible] apical cell. [illegible]

[illegible], [illegible] according [illegible]

[illegible] placenta [illegible], [illegible]

microsporangia, [illegible]

of the apical cell [illegible]

single megasporangium [illegible]. Goebel ('..)

states that the sorus canals of Marsilia are [illegible] in origin and that the sporangia arise from superficial cells. Büsgen ('90) described the earliest stage of the sporocarp as in one case a "[illegible]" (Lücke) in the epidermal tissue of the young leaf near its base, and in another place as a swelling or [illegible] near [illegible] same [illegible]. The sporocarp grows forward by means of a single apical cell, and it is [illegible] probable that all of the sorus cells are derived from an epidermal cell of the ventral side of the capsule. The placenta macrosporangium and microsporangia [illegible]

[illegible].

In the similar sporocarp of Pilularia, [illegible] ('..) and Juranyi ('..) describe [illegible]

[illegible] single [illegible], [illegible] Goebel ('..), [illegible] ('..) [illegible]

[illegible] (Fig. [illegible]). [illegible]

[illegible], [illegible]

[illegible] (Figs. [illegible], [illegible]), [illegible]

[illegible] cell [illegible], [illegible]. The [illegible], [illegible] cell, [illegible] capable of forming, [illegible], [illegible], [illegible] in [illegible]. In its [illegible], [illegible] in [illegible] cell [illegible], [illegible] sembles closely [illegible] of L[illegible], which [illegible] shown by P[illegible] (S[illegible], Fig. [illegible]) [illegible] cell [illegible].

The typical cell of the [illegible] in [illegible], [illegible], [illegible]. I [illegible], much like [illegible], [illegible] (Fig. [illegible]) [illegible], [illegible] (Fig. [illegible]). Fin[illegible], [illegible]

[illegible]

[illegible] (Fig. [illegible]). The [illegible] sporocarp [illegible] in the circinate [illegible] leaf, and the bending mentioned [illegible] straightened out, as Johnson ([illegible]) has shown, by the more rapid growth of the ventral side of the capsule. The activity of the apical cell as such, is ended by the appearance in it of a wall, which in horizontal section is apparently periclinal, but its exact position was not made out satisfactorily in sagittal sections. At the time when this wall appears the bending mentioned above has taken place, the capsule is a millimeter long,. and the sori at the base of this are developed as far as that shown in Fig. [illegible].

The first few pairs of segments of the sporocarp, probably four or five, form the stalk, and [illegible] develop the [illegible] of the capsule. On [illegible] the first three pairs do not develop sori [illegible] only [illegible]. E[illegible]

[illegible]

[illegible] capsule. [illegible]

[illegible] pairs, [illegible]

[illegible]. T[illegible]

[illegible] (Fig. [illegible]), [illegible] (Fig. [illegible]) [illegible] dividing [illegible]. Th[illegible] [illegible].

The [illegible] apical cell [illegible], [illegible], [illegible] divisions [illegible]. [illegible] walls I and II (Fig. [illegible]) [illegible], [illegible] (a.c., Fig. [illegible]) [illegible], [illegible] wall III is formed in [illegible] (III, Fig. [illegible]). The [illegible] (Figs. [illegible] - [illegible]), is [illegible] for the [illegible] cap. After [illegible] III, however, [illegible], [illegible], [illegible] wall IV [illegible] original cell and parallel to III, [illegible] on the ventral side [illegible] (IV, Fig. [illegible]). Wall V [illegible], [illegible]

IV [illegible] (V, F[illegible]. [illegible]), [illegible]

[illegible] (VI, F[illegible]. [illegible]) [illegible]

[illegible]

[illegible]

W[illegible] [illegible] (F[illegible], F[illegible].

[illegible]0), [illegible]

[illegible]

A. [illegible] ('[illegible]0), [illegible]

[illegible]

W[illegible]

[illegible] . T [illegible]

usually [illegible] macroscopic [illegible] sometimes [illegible] microscopic [illegible] (V, Figs. [illegible]). Some [illegible] IV [illegible] VI [illegible] , [illegible] [illegible] cells, [illegible] "[illegible]" [illegible] . I [illegible] IV [illegible] , [illegible] s, [illegible] III [illegible] II [illegible] (IV, F[illegible] . [illegible]). [illegible]

[illegible]

III. I [illegible]

II [illegible] V [illegible] (F[illegible]. [illegible]0) [illegible] (F[illegible]. [illegible]), [illegible]

T[illegible] C[illegible].

[illegible]

[illegible] I [illegible], [illegible] [illegible], [illegible]

[illegible] hypodermis. All [illegible]

[illegible]. Sections III, IV and V, [illegible] cell, [illegible], [illegible] II [illegible] V [illegible], [illegible] final cell is [illegible] position (Figs. [illegible]). [illegible] section IV, [illegible] (Figs. 1, [illegible]), [illegible], [illegible] is greatly [illegible]. Finally section VI [illegible] end, [illegible] cell arising [illegible] marginal cell and spreads over the [illegible] section V [illegible] (Figs. [illegible]). [illegible] III breaks [illegible] (Figs. [illegible]) [illegible]. [illegible] IV [illegible],

[illegible] , [illegible]

[illegible]

halves of [illegible] (l.c., F[illegible]. [illegible]). I [illegible] I

[illegible]

[illegible]

[illegible] (l.c., [illegible], F[illegible]. [illegible] - [illegible],
[illegible]).

On [illegible] cell, [illegible] section II [illegible] cells (Pl. [illegible] Fig. [illegible], [illegible]) [illegible] adjoining tissue [illegible] the capsule described by Hanstein (' [illegible]) and Russow (' [illegible]). The plerome [illegible] section V divides [illegible] radial anticlines (l.c., Fig. [illegible], [illegible]1) and [illegible] under [illegible] inner end of the cells of [illegible] tiers, [illegible] inner [illegible] section VI (Fig. [illegible] - [illegible]). The [illegible] of the plerome of this section is [illegible] to [illegible] form the dorsal part of the [illegible]

[illegible] II. I [illegible] by which [illegible] is continued [illegible], [illegible] and. The [illegible] V [illegible], [illegible] V [illegible] (F[illegible]. [illegible])

[illegible] (Fig. [illegible]), [illegible] (i.m., o.m., Fig. [illegible]). [illegible] VI [illegible] cells [illegible]. This portion of each of these two sections becomes several cells in thickness (Figs. 54, 55), and gives rise to a part at least of the ventral portion of the [illegible] ring, while the inner portions (o.ind., i.ind., Fig. [illegible]) remain one cell thick even till maturity. This latter statement, however, is strictly true only of the basiscopic portions of [illegible] segments, as we shall see later.

The Sporangia.

It remains to describe the development of the [illegible] important division of the soral segments, the basiscopic ultimate marginal cell. This has a very interesting and significant history, since each is the mother cell of all the sporangia of the sorus formed in its segment. It is [illegible]

[illegible] [illegible]. [illegible], [illegible], [illegible] [illegible] marginal cell [illegible] [illegible] [illegible], nor [illegible] [illegible]. [illegible] marginal cell, [illegible] epidermal origin. [illegible], is found in the [illegible], [illegible] cell [illegible] layer, [illegible] (Fig. 70).

In the growth of this [illegible] cap [illegible] place shown in section VI is formed, [illegible] cell lengthens in radial direction. At the same time [illegible] cell [illegible] separate [illegible] section V (s.c., Fig. 71). [illegible] marginal cell [illegible] in [illegible] (Fig. [illegible], [illegible]). I[illegible] [illegible] [illegible], [illegible] cont[illegible] [illegible]. T[illegible] (Fig. [illegible]) [illegible], [illegible] [illegible] co[illegible] ([illegible] s.c., Fig. [illegible]),

[illegible]

[illegible] (Fig. 1), [illegible] (Fig. [illegible]).

In [illegible] V, [illegible] (s.c., Fig. [illegible]). This [illegible] (s.c., Fig. [illegible]). This [illegible]

V [illegible].

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Conclusions.

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[illegible], [illegible], '[illegible] : [illegible]. [illegible]
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[illegible]. [illegible], [illegible].

[illegible]L, [illegible]., '[illegible] : [illegible] "[illegible]" [illegible]
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[illegible] ; [illegible] ; [illegible]

[illegible] ; [illegible] ; [illegible]

[illegible] ; [illegible], ([illegible]); [illegible]

[illegible] ; [illegible] ; [illegible]

[illegible] ; [illegible] : C. [illegible] ; [illegible]

[illegible], [illegible] ;

[illegible] ; D. [illegible] ; [illegible]

[illegible] ; [illegible] [illegible] L. [illegible]

[illegible] ; [illegible] [illegible]

[illegible] ; [illegible] ; [illegible] ; [illegible]

[illegible] ; [illegible] ; [illegible]

[illegible], [illegible]

[illegible] ; [illegible] ; [illegible]

[illegible] ; [illegible] ; [illegible]

; L. [illegible] ; [illegible]

[illegible] ; [illegible], [illegible]

[illegible] ; [illegible]

[illegible], [illegible]

[illegible], [illegible] ; [illegible],

[illegible]

[illegible] *S.* [illegible]

[illegible] *V.* [illegible]

[illegible] *I. II. III.* [illegible]

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[illegible] 00.

[illegible] 00.

[illegible] S[illegible]

[illegible] 00.

[illegible] S[illegible]

[illegible] x[illegible]00.

F[illegible] P[illegible]

[illegible] 00.

F[illegible] 00.

F[illegible] D[illegible]

x[illegible]00.

F[illegible] S[illegible]

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[illegible] 0. [illegible]

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F[illegible] T[illegible]

[illegible] 0.

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Fig. [illegible] T[illegible]

[illegible] 0.

F[illegible] P[illegible]

[illegible] x 00.

Fig. [illegible] T[illegible] 00.

Fi[illegible] T[illegible]

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P[illegible] III.

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